By Brian Morland

Chatwood's Single Spindle Letter Lock

Known to most locksmiths as the SAM lock, SAM-short for Samuel as in Samuel Chatwood but in the works it was known as the SSLL – Single Spindle Letter Lock.

It's a unique principle 3 letter combination lock dialling in much the same way as other combination locks however the mechanics was completely different. The lock first made its appearance in the early years of the 20th century. In fact Chatwood must have been very confident about the efficacy in that 4 'Sam' locks were fitted to a circular 30ton door exhibited at the British Empire Exhibition held at Olympia in 1924. One thing that's speculated on is th significance of a star in front of the serial number; this is now clarified in the Routine Instruction Sheets below. Many locksmiths also struggle with the servicing/resetting of this historic lock and so I thought I would pull together a few hints and tips from the archive documents and photographs into one article.

Firstly the operation is described and is taken from Chatwood's own "Instructions for working The Chatwood Letter Lock". Be aware that sometimes this lock is a stand-alone unit on a safe/door or it might be used in conjunction with one or more key operated locks; in other words the sequence of operating the combination lock, the key lock(s) and the throwing of bolts and shutters should be observed. The Chatwood instruction reads thus:-

The distinctive SAM lock dial.
Those eagle-eyed readers will notice the index mark appears in different positions.

"The Chatwood Letter Lock has two functions:-
a) It acts as an independent lock on the bolt mechanism.
B) When key locks are also fitted it operates steel slides which cover the key holes and prevent the insertion of keys until the Letter Lock has been unlocked.
Safes and Strong Room Doors are despatched from the works with the Letter Locks set to the combination "S.A.M."

To Unlock the Letter Lock

For the purpose of illustration the combination "S.A.M." is used. It will be understood that when a fresh combination has been made the new letters will be substituted for "S.A.M." in carrying out the undermentioned operations.

Revolve the dial right (clockwise) until the first letter of the combination ("S") is between the index marks.
Revolve the dial three complete turns to the right (clockwise), stopping with first letter ("S") between the index marks.
Revolve the dial to the left (anti-clockwise) passing the first letter ("S.A.M.") twice, and continue to revolve to the left until the second letter of the combination ("A") is between the index marks.
Revolve the dial to the Right (clockwise), passing the second letter ("A") once, and continue to revolve to the right until the third letter of the combination ("M") is between the index marks.
Revolve the dial to the left (anti-clockwise) until the star is between the index marks.
Revolve the dial to the right (clockwise) (approximately past two blank spaces) until it stops. This operation completes the unlocking of the Letter Lock.

If a mistake is made in carrying out operations 1 – 5, in that the letter being dealt with is revolved past the index marks, this

HISTORY OF LOCKS

mistake cannot be rectified merely by turning the dial back to the correct letter. It is necessary to commence afresh with operation 1.

N.B. – When positioning the letter or star it is essential that the line on either side thereof be exactly opposite the index marks.

To Open Safe or Strong Room Door
Unlock the letter lock, or locks, as described above, and then the key locks if these are also provided.

To Lock the Letter Lock
Revolve the dial three complete turns to the left (anti-clockwise). This destroys the combination.

N.B. – This operation can only be carried out after the bolts of the safe or Strong Room Door have been thrown, and the keys removed from the key locks (if any).

To Lock the Safe or Strong Room Door
After closing the door, first lock the Key Locks, if any, and then the letter lock as described aboce.

To change the combination of The Chatwood Letter Lock
Clients are strongly recommended to change the combination "S.A.M." to one of their own selection before the Safe or Strong Room Door is taken into use.

The change can only be made when the door of the Safe or Strong Room Door is open.

The lock can be set to any desired combination of three letters and these letters should be well distributed over the alphabet, *e.g.*, "B.Y.K." would be a well-chosen combination, but "A.B.C." would be an ill-chosen one.

A letter should not be repeated, e.g., A.C.A. or A.A.A. would be ill-chosen combinations.

Open the door of the Safe or Strong Room.
Throw the main bolts by means of the handle or hand wheel.
Withdraw the keys from the locks if the door be fitted with key locks in addition to the Letter Lock.
Ensure that the letter lock is unlocked, then turn the dial slowly to the left (ant-clockwise) and stop when the star comes between the index marks for the first time.

The Letter Lock is now in the same condition as after completing operation (5) when unlocking.

Insert the change key in the back of the letter lock and turn the key as far as it will go, i.e., a little more than half a revolution.
Revolve the dial to the right (clockwise) until the first letter of the new combination is between the index marks.
Revolve the dial three complete turns to the right (clockwise) stopping with the first new letter between the index marks.
Revolve the dial to the left (anti-clockwise) passing the first new letter twice and continue to the left until the second letter of the new combination is between the index marks.
Revolve the dial to the right (clockwise) passing the second new letter once and continue to revolve to the right until the third letter of the new combination is between the index marks.
Turn and withdraw the change key from the back of the letter lock, thereby setting the letter lock at its new combination.

N.B.- After making the new combination and before closing the door, test the new combination several times, unlocking and locking to ensure that the change has been made correctly."
Chatwood issued several 'Standing Instructions' to both the factory and branches when these locks were returned for servicing:-

"**Single Spindle Letter Locks (Exchange Service)** Routine Instruction Sheet No.121 Date 12/10/1936

1. London, Manchester and Glasgow Branches will each be supplied with one S.S.L.L. fitted with the latest balanced gear movement.

This will be a "service" lock, that is to say, when a Customer's letter lock requires attention by the works but the Customer will not agree to the period of absence the "service" lock will be fitted in place of the existing one.

The removed lock will be sent to the Works for overhaul and will become our property.

When overhauled it will normally be sent back to the branch as their “service” lock.

The customer will be charged with the cost of bringing his lock to proper condition for re-use.

2. These locks will have the old type of round bolt extension for connecting to the keyhole shield. This type of lock is suitable for all Std. Treasury Quality Strongroom Doors and Safes.

3. If difficulty is experienced in fitting the “service” lock then as a temporary measure the existing lock should be cleaned in accordance instructions.

3. Details should be taken for a special lock to be prepared by the Works if the client accepts the advice that the lock ought to be replaced.

4. To ensure that all the necessary details are obtained a drawing, No. 7295E, has been prepared for the use of branches and the mechanic should have copies of this sothat he can fill in the blank spaces. One copy should be retained by the branch and the other sent to the Works for the preparation of the replace lock.

5. If times permits and before a mechanic is sent to attend to an S.S.L.L. the branch should refer the matter to the Works so that they may say whether the “service” lock would be suitable and if not, what arrangement of lock be required.

Left - A general view of the SAM lock back showing the change key chamber. Generally these chambers were around 18mm deep but they have been noted at around 300mm such as in the 30ton circular door exhibited at the British Empire Exhibition held at Olympia in 1924.

Above - A detail from this lock showing the star before the serial number and the date stamped below the serial number as described in the Routine Instruction Sheet.

Single Spindle Letter Locks Routine Instruction Sheet No. 86 [unfortunately this document is undated but is in sequence with others dated 1933/1934 – Author]
A new type of movement to be known as “the balanced gear movement” is now being fitted to our S.S.L.L.’s and locks containing this new movement are marked with a star in front of the lock number.

After this date no lock must leave the works unless it is fitted with the “ Balanced gear movement” and also bearing the star.

Any S.S.L.L. which departs in any way from this instruction must be returned to Mechanism Department at once.

HISTORY OF LOCKS

Cleaning The Chatwood S.S.L.L. Locks Instructions to Branches. Routine Instruction Sheet No. 86 Date 18/7/1934.

1. It must be distinctly understood that the authority to clean the above locks contained in this instruction is to apply only in those cases where it is impossible to send the lock to the works for attention. Whenever possible the above locks must be returned to the works when they require attention, and when this is done they should not be opened before dispatch, and must be complete with knob, rose and spindle, and one change key.

When it is not possible to send the lock to the Works, the branch may after August 1st 1934 carry out the cleaning and minor adjustment of any letter locks in accordance with the following instructions.

2. For the purpose of this instruction the above locks may be divided into two classes:
a)Locks with thin fixed spacing washers on either side of a carrier disc.
b)Locks without spacing washers.
In the case of old locks where a steel cover plate is placed over the lock, this cover plate should be returned to the Works, together with the lock.

3. Cleaning locks with spacing washers. (class a)
The lock must be dismantled and all parts washed in petrol anddried with a soft cloth, free from fluff; during the re-assembly the following parts must be oiled with Vaughan's S.5 Absored Oil.
1) Barrel
2) Carrier Discs
3) Spacing washers
4) Permutation gears
5) Eccentric (lightly)
6) Bolt lever fulcrum pin
7) Operating disc bearing

Note! The small bolt slide should be kept free from oil.

4. Cleaning locks without spacing washers. (class b)

These should cleaned as described in 3, and very thinly oiled on the following parts with Vaughan's S.5 Absorbed Oil.

1) Eccentric
2) Barrel
3) Bolt lever fulcrum pin.
4) Operating disc bearing.

Note! The small bolt slide should be kept free from oil.

5. After a lock has been refixed, and this applies whether the lock has been overhauled by the works as well as those dealt with by the branch, an inspection sheet as copy attached must be completed and sent H.O.

Single Spindle Letter Locks. Routine Instruction Sheet No. 22. Date 8th Decenber 1948 (Revised Dec, 1948. Cancels old R.I. 22 and 117.).

This instruction refers only to the Chatwood type of S.S.L.L. that is, the old type of letter lock operating on three letters.

These locks should be returned to the Works at least once every 10 years, because during this period wear is likely to take place on certain of the parts, and this can only be corrected at the Works.

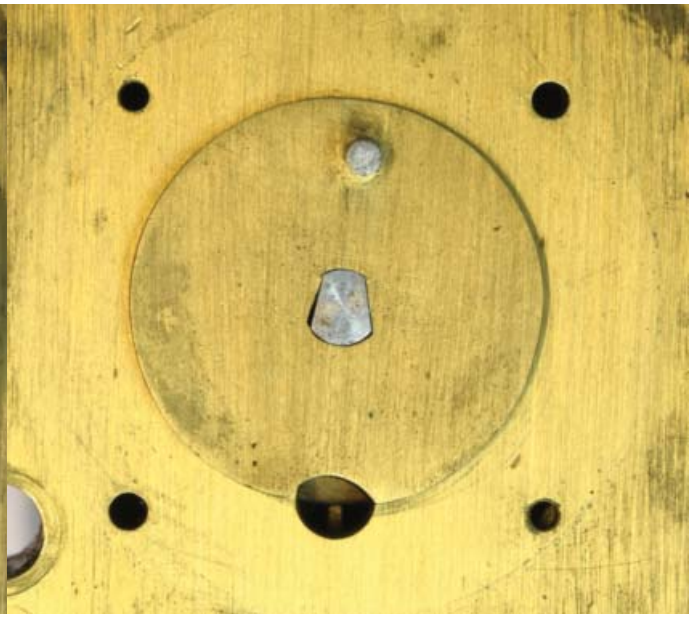
A table is given below showing the year of manufacture and the corresponding numbers of the locks made during each year, and from this locks which should be sent to the works can be recognised:-

Year	Lock Numbers	Prog. Numbers
1928	172939-3960	36269-39828
1929	174500-535	29829-40445
1930	177714-19	

1931	178348-71
1932	-
1933	182776-3700
1934	189006-9035
1935	189983-161
1936	190138-161
1937	190327-356
1938	-

A * stamped on the lock before the serial number indicates that the lock has had attention at the Works sometime between 1930 and 1939. If there is any doubt as to when a starred lock was last at the Works, the matter should be referred to Head Office.

Cap removed from the 4 lever change key chamber.



The chamber lifted out revealing the gating inspection aperture.

In January 1940, the practice was adopted that when a S.S.L.L. is returned to the Works for attention, the date will be stamped on the lock immediately below the serial number.
As it is now over eighteen years since the stamping of an asterisk on the locks was commenced to indicate the lock which back to the Works, and over eight and a half years since the practice of stamping the date on the lock was first used, all locks not having a date stamped on them, even though they may have an asterisk, are to be returned to the Works.

Testing of the Indexing.

The proper way to test the indexing of these locks is as follows:-

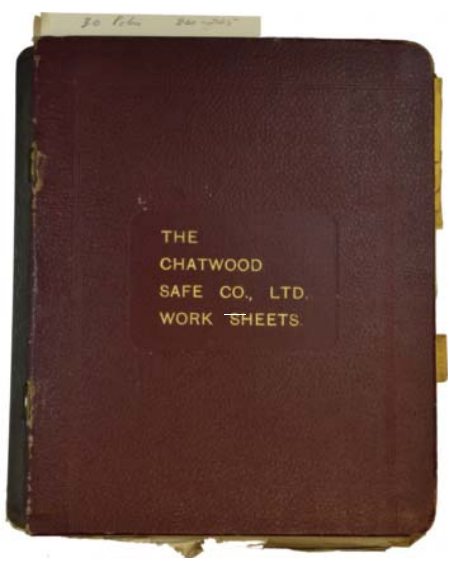
First set the lock to the combination ‘SSS’. Then rotate the dial four times, stopping exactly at the letter set, then remove the back lock and note the position of the gating stump in relation to the gating in the discs. The index marks on the rose should be adjusted so that the gating stump is exactly central, then revolve the dial four times in an anti-clockwise direction, again stopping at the letter set, and again noting the position of the gating stump. This should be in exactly the same position relative to the gating slots as it was when the dial was rotated in a clockwise direction.

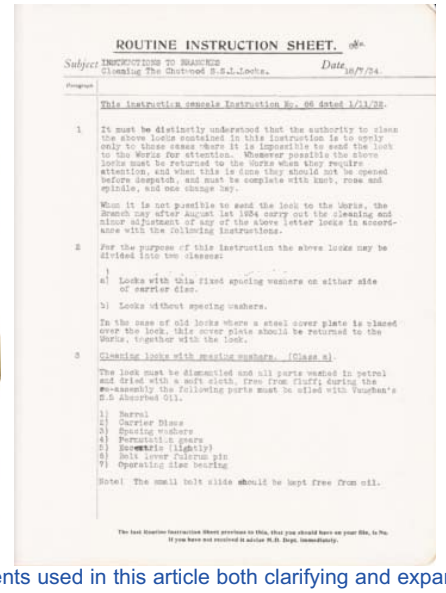
It is particularly important that this test be applied to locks which have been removed from the Safe or Door and refixed.

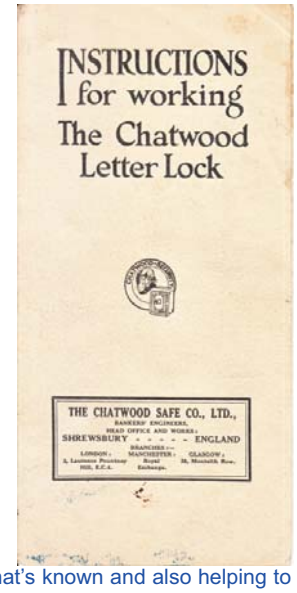
N.B. If the indexing of the lock cannot be corrected by moving the rose, and this is generally indicated by the fact that the gears do not line up when the lock is set at a combination in the ordinary way, one of the discs being out of line with the other two, then the lock should be returned to the Works for attention, as it may be necessary to replace the indexing gears.”

Although these hints and tips relate to a lock that is long obsolete they are still encountered, additional y it is a lock that operates in a largely conventional way but the mechanics are quite different hence the reason it ends up in collections. Much of the

HISTORY OF LOCKS




ROUTINE INSTRUCTION SHEET.



A selection of the original Chatwood documents used in this article both clarifying and expanding what's known and also helping to ensure historical accuracy.

information presented hear has been taken directly from Chatwood's 'Routine Instruction Sheets' – There are some four large volumes of these instructions in the HoL Archive covering every aspect of the company; I'm sure they will be frequently referenced in future articles.

Brian Morland, curator of the MLA Heritage Room, HoL Archive and the HoL Heritage Collection of Locks and Keys, welcomes comments and corrections on historical aspects of locks and keys. Brian can be contacted by email: brian@emorlands.com

Videx Strengthens MiAccess Access Control Range

Door entry and access control manufacturer has introduced a new handle for its range of MiAccess proximity readers. The HL1000-MF provides an ideal access control solution for small to mid-sized installations including offices, guest houses, industrial units and schools.

The Mifare proximity handle can be used as a standalone unit or as part of a system including MiAccess readers and other accessories, such as the AL500-MF handle.

Sian Luxton, Key Accounts Manager at Videx, said: "The HL1000-MF is an extremely versatile door handle and lock that can provide access to an unlimited number of users, access to one or more doors, and can restrict access whenever it is required therefore making it ideal for different access control solutions.

"It's very easy to install and use too; all you need is the handle, a PC and a USB desk reader for programming alongside the user's cards or fobs. User cards and fobs are programmed at the PC and then issued to the users without the need to visit the site or development to programme anything further; saving time and cost because no wiring connections or power supply are required."

Fobs are also available in a range of colours to further simplify the management of the system. It is compatible with both the PROA MS and PROH MS MiAccess software, where programming, configuration settings

and event logs of the built-in reader can be transferred between the PC and the reader. This is carried out via the micro-USB or with programming cards where the programming information is transferred from the card to the reader. User cards can be created via the software with the PROX-USB desktop enrolment reader where access rights can be registered directly onto each corresponding card.

Sian added: "The battery powered handle can be used internally or externally and has a robust stainless-steel body and handle. It also includes a dead lock with a key override facility to the secure side and thumb turn release for the inside. Two override keys are included.

"It can be used on up to a maximum of 80 doors, has an unlimited user capacity and up to 3,500 events can be logged. There are four variants of the handle which can be used for inward or outward opening doors and doors which open to the right or the left."

The handle is powered by 4x standard AA batteries giving on average 60,000 opening cycles.

For more information about the HL1000-MF handle, please visit: www.videx.com